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Short Communications

Semicircular lipoatrophy: 18 cases in the same company

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Key words: semicircular lipoatrophy; repeated mechanical microtrauma; furniture; occupational; office workers.

Semicircular lipoatrophy is characterized by a semicircular depression on the anterolateral aspects of the thighs due to loss of subcutaneous fat. It typically affects women in their 30s, usually appearing within a few weeks, but not disappearing until a few months or years later.

Case Reports

4 index cases were examined in the department of occupational diseases.

Case no. 1. A 27-year-old woman, with an unremarkable medical history, was seen in July 1997 with a subcutaneous depression on the anterolateral aspects of both thighs. She had noticed the "dent" 6 weeks after starting her job. The overlying skin was normal and there was no induration on palpation. She did not complain of pain, burning sensations, or fatigue. Concerned about the aesthetic impact, she had consulted a general practitioner, a dermatologist and a neurologist. Results of investigations, including blood count, chest X-ray, electrocardiogram, and electromyogram, were normal.

Case nos. 2–4. 3 women, aged 26 to 32, all 3 working at desks, showed similar band-like semicircular depressions on the thighs. The depressions were bilateral and, in 2 cases, symmetrical. They had no remarkable medical history. The overlying skin was normal. One woman had complained of heavy legs for many years and another had noticed an increase in the depression on walking.

Workplace Analysis

The company, a telecommunication networking specialist for corporations, mostly employs young dynamic staff and had recently moved into a new office equipped with modern-design, salient-edged furniture. The employees, very active and moderately stressed, repeatedly stand up and lean across their desks to exchange files with colleagues sitting opposite. All desks were the same, 70 cm high and 10 mm thick.

We examined 89% of the employees (58 out of 65), including the 4 index cases and 10 employees working in maintenance or off-site. A subcutaneous depression was detected in 31% of the staff examined (18 out of 58). All worked at a desk: thus, 37.5% of deskworkers (18 out of 48) had a subcutaneous depression. The sex ratio of the cases (12 women and 6 men) was significantly different from that of the workforce ($p<5\%$). The women were all around 30 years old, the men between 26 and 56. The depression was mostly bilateral (15 out of 18) and symmetrical (8 out of 15). The lesions measured 3 to 5 cm (up to 12 cm) horizontally, 1.5 cm vertically, and were 1 to 10 mm deep. None of the men and few of the women had noticed the lesions. The overlying skin was normal. Cellulitis was noted in 4 women.

1 employee was under treatment for hypercholesterolemia. None of the others had a remarkable medical history. In particular, none had received injections of insulin, corticosteroids or acupuncture, nor reported any kind of trauma.

The position of the lesions on the thighs was different for each person. However, the height of the depression on the leg measured from the floor, plus the height of the shoe heel, was constant and the same as the height of the desks: 70 cm.

Discussion

Since the 1st discussion of semicircular lipoatrophy in 1974 (1), a few publications have reported similar cases. However, most were isolated (1–11, 13) and were rarely occupational (2, 7, 12). Only 1 group of 10 employees in the same company was reported by De Groot (12). All previously-described patients reported were women aged 20 to 40 (1, 2, 5–8, 10–13), except for 2 men (3, 4) and 1 of unspecified sex (9).

The depression was usually bilateral (1–9, 12) and symmetrical (1, 2, 4–7, 12), though some were unilateral (1, 4, 10–13), and on the anterolateral aspect of the thighs. The depression was located horizontally like a band, measuring about 1.5 to 4 cm with normal overlying skin and no muscle, nerve, or bone involvement (1, 2, 4–10, 12). Some patients complained of heavy legs, burning or tired sensations, pain after sports, or cramps (2, 3, 8, 10–13). 1 to 3 parallel depressions (1, 4, 8, 9) were observed on each thigh. Although the depressions took just a few weeks to appear, they regressed without treatment after a mean of 3 years and 9 months in the 15 cases described in (8), and in some cases as long as 8 years.

Several aetiologic hypotheses have been suggested, but our experience is consistent with repeated mechanical microtrauma which may or may not be occupational: employees subject to pressure from a chair (12), laundry workers leaning against their ironing boards (2), saleswomen resting against the counter (2), mothers of young children bending over the bath (5), women leaning against the basin to apply make-up (10), and people wearing tight jeans (7).

Because of the specific localization of the lesion and its linear distribution, Bloch & Runne (4) believed that such patients begin with impaired circulation in the affected region, due to a congenital abnormality in the lateral femoral circumflex artery, repeated microtrauma then causing ischaemic atrophy of fat cells. The first histological stage is vascular (5), consistent with this hypothesis. However, patients with arteritis or those with ligated quadriceps artery do not show semicircular lipoatrophy (5).

An anomaly of fat metabolism has also been proposed (5). However, no disorder of lipid metabolism nor diabetes has ever been found in these patients, and few have had hypercholesterolemia (1, 2, 5).

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Nickel allergy from orthodontic appliances

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Key words: nickel; orthodontic appliance; atopic dermatitis; contact allergy; dental patients.

Case Report

A 12-year-old boy, with lifelong atopic dermatitis, was referred with severe deterioration of his skin condition over the previous 18 months. On examination, he had marked perioral and periorbital eczema, with involvement of the anterior scalp and loss of hair. The exacerbation of his eczema appeared to coincide with the fitting of a fixed orthodontic appliance made of nickel-titanium wires and stainless steel brackets. He had also recently reacted to new metal-framed spectacles. He had no prior history of reaction to metals, did not have pierced ears and did not wear jewelry.

Patch testing to the European standard series showed ++ reactions to nickel sulfate 5% pet. and potassium dichromate 0.5% pet. The fixed orthodontic appliance was replaced with a removable one. Although made of a methyl methacrylate resin, this was stabilized with stainless steel wires, and it was not until all such metallic components were removed that his eczema improved. His hair regrew within 2 months.

Discussion

High rates of contact sensitivity to nickel are found in females (1) and in hairdressing (2), due to exposure to jewelry and other metallic objects (3). Nickel-titanium wires contain up to 50% nickel, and stainless steel may contain up to 8% nickel as well as chromium (4). Placing nickel-plated wires in distilled water or physiological saline releases sensitizing quantities of nickel ions (5). However, such reports in the literature are rare (6–10), and involve mainly non-atopic females with intraoral or facial reactions, and less often dermatitis at distant sites (Table 1). Patients with atopic dermatitis are considered by some to have reduced rates of contact sensitivity (11).

Table 1. Summary of the published cases of nickel sensitivity from dental prostheses (refs in parentheses)

Sex	Age (years)	Site of dermatitis	Patch test results	Time to settle
F (6)	13	oral oedema	nickel +++	not stated
F (6)	17	perioral dermatitis	nickel +++	2 weeks
F (6)	18	perioral dermatitis	nickel +++	1 week
F (7)	17	previous sites of nickel exposure	nickel ++ cobalt ++	not stated
F(8)	28	foot eczema	nickel ++	several months
F (9)	15	hand pompholyx	chrome ++	2 months
F (atopic) (10)	16	finger dermatitis	oral challenge: chrome pos	1 month
F (10)	13	eyelids, fingers	oral challenge: nickel pos chrome pos	appliance left in situ
F (10)	15	periorbital	−	2 months
F (10)	14	intra-oral	nickel ++	1 month
M (atopic) (10)	14	lips, palms and soles	nickel ++ cobalt ++	2–3 days

It was thought that orthodontic appliances, like earrings, might increase the rate of nickel sensitivity. In contrast, they may even induce tolerance (12). However, if sensitization from ear-piercing predates the orthodontic appliance, the frequency of subsequent contact dermatitis increases (13). We suggest that the possibility of contact allergy from an orthodontic appliance should be borne in mind if atopic dermatitis in a child is proving particularly difficult to control.

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Allergic contact dermatitis due to monovalent sensitization to the oxidation hair dye intermediate oxamitol (2-aminomethyl-p-aminophenol-2HCl) without cross-sensitivity to haptens of the para-group

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Key words: contact allergy; hair dye; allergic contact dermatitis; p-aminophenol; oxamitol; 2-aminomethyl-p-aminophenol-2HCl; lack of cross sensitivity.

Case Report

A 49-year-old non-atopic woman presented as an emergency with an acute itchy erythematous vesicular oedematous eruption of the scalp, upper eyelids, and neck, 3 days after her hairdresser had applied hair dye. The same hair dye had been used by the patient for several years without any problems. The dermatitis cleared completely after 5 days on oral corticosteroids and local treatment.

6 weeks later, patch testing with the German Contact Dermatitis Research Group standard series (DKG1) and hairdressers series (DKG2) showed a positive reaction at D2 solely to nickel sulfate. No sensitization to p-phenylenediamine, 3-aminophenol, p-aminophenol, or p-toluenediamine was found. Patch testing was then performed with the ingredients of the hair dye, kindly provided by the manufacturer (Table 1). At D2 and D3, we found a +++ reaction solely to the oxidation hair dye intermediate oxamitol (4-amino-2-aminomethyl-1-hydroxy-benzene-2HCl), whereas allergens of the para-group were negative (Table 1, Fig. 1).

Table 1. Patch test results

Substance	Conc.	Vehicle	D2	D3
p-toluenediamine sulfate	1%	pet.	–	–
4-amino-2-aminomethyl-1-hydroxy-benzene-2HCl (oxamitol)	1%	aq.	+++	+++
resorcinol	1%	aq.	–	–
p-amino-o-cresol	1%	pet.	–	–
perfume	0.5%	aq./alc.	–	–
copaiba balsam	0.1%	aq./alc.	–	–
dye base without dye intermediates and perfume	as is pH 7±0.5		–	–

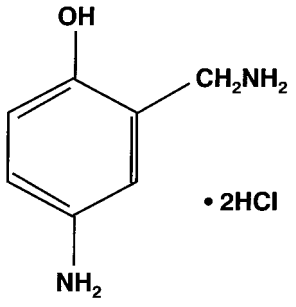

Fig. 1. Chemical structure of oxamitol (4-amino-2-aminomethyl-1-hydroxy-benzene-2HCl = 2-aminomethyl-p-aminophenol-2HCl).

Discussion

Contact dermatitis is the most frequent manifestation of allergy to synthetic hair-dyes (1, 2), but immediate hypersensitivity reactions have also been described (3–5).

To our knowledge, this is the 1st description of allergic contact dermatitis due to monovalent sensitization to oxamitol, without cross-sensitivity to other aminobenzene compounds such as p-phenylenediamine, p-aminophenol, or p-toluenediamine. The cross-allergenic potential of amino- and nitro-substituted aromatic compounds has frequently been described (6–8). For para-substituted amino compounds, benzoquinone has been suggested as being a prohapten responsible for cross-sensitivity (9), though recent observations do not confirm this theory (10, 11). The oxidation dye intermediate oxamitol (4-amino-2-aminomethyl-1-hydroxy-benzene-2HCl) represents a 1,2,4-substituted benzene derivative (Fig. 1), and this substitution may be the reason for the lack of cross-sensitivity to other haptens of the para-group.

To our knowledge, oxamitol (CAS no. 135043–64–0, Colipa number A112) is used in hair-dyes but not to dye furs, wool, or textiles. In general, oxamitol is applied together with the oxidation hair dyes p-phenylenediamine or p-toluenediamine.

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Leukonychia from 2-ethyl-cyanoacrylate glue

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Key words: leukonychia; cyanoacrylate glue; onychodystrophy; light microscopy; electron microscopy.

True leukonychias may be infective, traumatic, cosmetic or chemical: they do not damage the matrix. They are seldom total and permanent, in the form of strips or bands (1). Leukonychia striae occur more frequently after local matrix and mechanical trauma (2). The difference between cyanoacrylate glues for domestic or for surgical use lies in the length of the lateral 2-alkyl chain of the monomer (3), short and long, respectively (4).

Case Report

A 45-year-old man presented with a whitish 2.5×6 mm transverse strip on the left middle finger nail (Fig. 1). He first noted the lesion 1 h after a drop of a 2-ethyl-cyanoacrylate glue had fallen onto this nail, during do-it-yourself. He had promptly wiped off the glue with water and then with ether. He had no previous history of contact dermatitis. There were no other abnormalities in laboratory data or on physical examination. The lesion remained constant in size and advanced with normal nail growth. There were no erythematous scaling lesions of the paronychium or fingers.

When the nail plate reached the border of hyponychium, it was excised for microscopic study, part being stained with toluidine blue for light microscopy, and the rest being cut into ultrathin sections for electron microscopy. Sections revealed areas of homogenated keratin associated with microfractures in the intermediate portion of the nail plate. There was no definite parakeratotis. A band of onychocytes with clear and dyshomogeneous cytoplasm was also evident (Fig. 2). On transmission electron microscopy, electron-dense globular

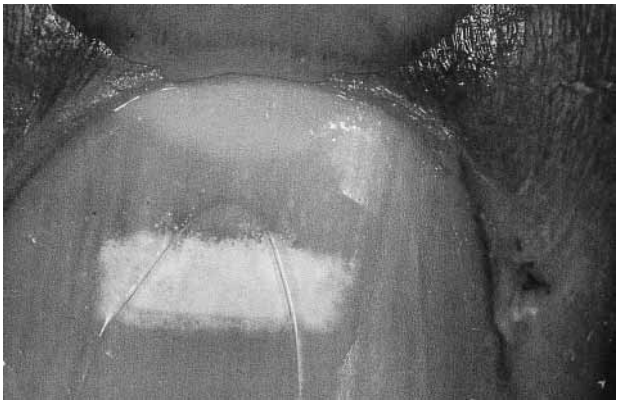

Fig. 1. Epiluminescence (10 ×) examination showing the strip of leukonychia 5 days after contact with the cyanoacrylate glue.

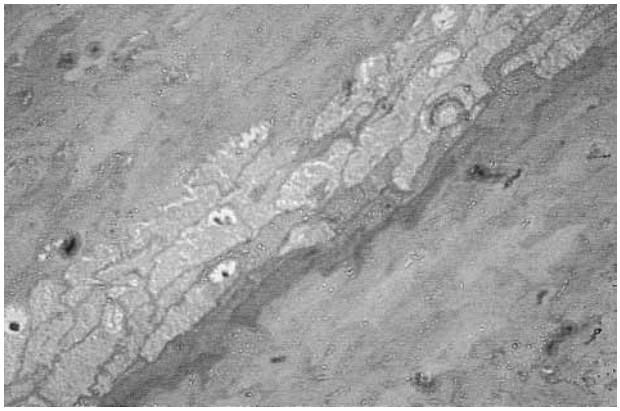

Fig. 2. A semithin section (1.5 μ) stained with toluidine blue showing cytoplasmatic and intercellular alteration of onychocytes (200 ×).

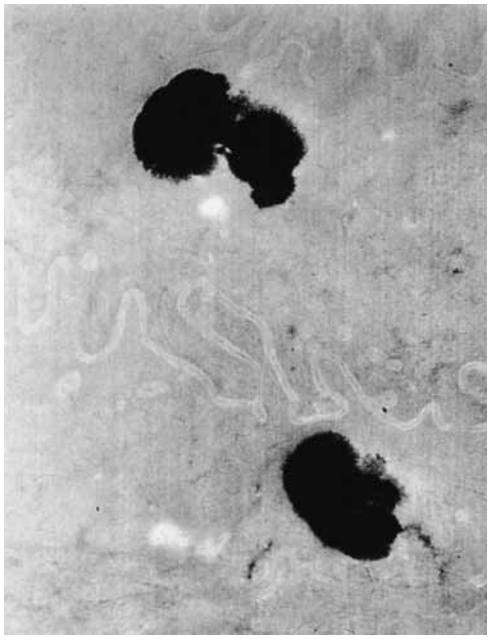

Fig. 3. Dense globular bodies in the cytoplasm of onychocytes.

Fig. 4. Dense globular body escaping from the free border of the nail lamina.

bodies of variable size and deposition of fibrillar material were evident near microfractures within the intermediate nail plate structure (Figs. 3, 4).

Discussion

2-ethyl-cyanoacrylate is the main component (>90%) of cyanoacrylate glues for cosmetic (5) and industrial use. It polymerizes in the presence of water and alcohols, or NH_2 in proteins, which function as electron donors (6). The polymer deteriorates continuously in the tissues, forming cyanoacetates, water and formaldehyde, though less rapidly when the monomer is long-chained (3), allowing surgical use. Acrylates can also induce atypical fingertip dermatitis from occupational or non-occupational exposure. Allergic reactions have also been reported (7–11). Some authors (9, 12) consider allergy to cyanoacrylates to be unlikely and contact sensitization to polymerized cyanoacrylate has rarely been reported (5, 7, 10, 11). Reactions to cyanoacrylate adhesive used for artificial nails can cause nail dystrophy, paronychia and onycholysis (13), with subungual hyperkeratosis and eczema of the fingertips as well, more distantly (9, 14).

In our patient, focal degeneration of the intermediate layer of the nail plate probably occurred by reaction of α-keratin fibrils with products of 2-ethyl-cyanoacrylate hydrolysis. These compounds may have precipitated into the intermediate layer of the nail plate and formed covalent links with keratin material in onychocytes and in their intercellular junctions, appearing as electron-dense globular bodies or areas of keratin homogenation on transmission electron microscopy. The effect of this interaction modified the physical and the optical properties of the arrangement and structure of the intermediate nail plate.

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Textile contact dermatitis presenting as lichen amyloidosus

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Key words: lichen amyloidosus; allergic contact dermatitis; clothing; textiles; formaldehyde-resin finishes.

In contrast to systemic amyloidoses, the amyloid in lichen amyloidosus (LA) is not derived from immunoglobulin or serum protein, but from keratin peptides of necrotic keratinocytes (1). Necrosis of keratinocytes may be induced by prolonged scratching. The question of whether scratching is a symptom (2) or the cause of LA (3), remains controversial.

Case Report

A 56-year-old man had been followed in our outpatient clinic since 1968, because of a symmetrical pruritic eruption over the chest, back, and extensor arms, which had appeared during his military service as a chef when 19 years of age. It was composed of multiple, discrete, hyperkeratotic papules that coalesced to form plaques.

Histological examination showed irregular acanthosis and hyperkeratosis of the epidermis. Many melanophages and large amorphous globules were noted in the papillary dermis, and a perivascular infiltrate of polymorphonuclear cells, lymphocytes and histiocytes in the dermis. The globules in the papillary dermis showed a positive reaction to Congo-red staining.

Based on these clinical and histological findings, a diagnosis of LA was made. Many treatments were tried, including topical and systemic corticosteroids, systemic sedative antihistamines, trichloroacetic acid 30% and radiotherapy, with only transient improvement.

In 1995, European standard patch testing (Chemotechnique Diagnostics, Malmö, Sweden), showed a positive reaction to formaldehyde and fragrance mix. The patient was instructed to wear clothes without formaldehyde resins; however, his compliance was low, and there was no change in the intensity of the pruritus and the eruption.

In 1997, the patient underwent further patch testing with a textile colors and finishes series (Chemotechnique Diagnostics), and was found to have positive reactions to all formaldehyde resins (Table 1). This convinced him of the importance of avoiding clothes with formaldehyde resins. On follow-up 1 year later, the eruption and pruritus had disappeared simply by avoidance of these allergens and without any further treatment.

Table 1. Positive patch test result

		D2	D3
European standard series			
formaldehyde	1%	+	+
fragrance mix	8%	+	+
Textile colors and finishes series			
dimethylol dihydroxyethyleneurea	4.9%	−	+
dimethylol propylene urea	5%	?+	++
tetramethylol acetylenediurea	9%	?+	+
ethyleneurea	5%	−	+
urea formaldehyde	10%	−	+
melamine formaldehyde	7%	?+	+

Discussion

Weyers et al. (4) claimed that chronic scratching was a cause of amyloid. The pruritic diseases associated with LA are venous insufficiency (4–6), atopic dermatitis (4–7), cholestasis (8), keratosis lichenoides chronica (9), Sipple syndrome (10, 11), diabetes mellitus and renal insufficiency (4). All of these are chronic, and none has a known cure. Weyers et al. (4) thus recommended that the "treatment of LA has to be directed at the amelioration of pruritus and the discontinuation of scratching".

Ours is the 1st reported case of LA due to contact dermatitis. The patient's avoidance of clothes with a formaldehyde resin finish led to the disappearance of both the eruption and the pruritus. This is proof of the rôle of pruritus as a cause of LA. Some patients reported to have LA, however, have no history of pruritus (2, 12).

Contact allergy to textile finishes is no longer very common. Fowler et al. (13) reported a frequency of textile-formaldehyde resin dermatitis of 1.2%, while Shertz (14) found textile contact dermatitis accounted for 2.3% of all cases of eczema in her patient population. Eczematous lesions are the most frequent, followed by papulopustular lesions, hyperpigmentation, purpuric lesions and erythroderma (15).

We suggest that textile contact dermatitis should be suspected in all patients with LA on areas normally covered by clothing, and that such patients should be patch tested with a textile colors and finishes series.

Acknowledgements

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Allergic contact dermatitis from diallyl disulfide

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Key words: diallyl disulfide; garlic; housewives; hand eczema.

Allergic contact dermatitis from garlic is considered to be due mainly to diallyl disulfide and to have a typical distribution pattern of pulpitis on the thumb, index and middle fingers of the non-dominant hand, and the thumb of the dominant hand (1–13).

Patients and Methods

We started patch testing with diallyl disulfide in 1994, initially only on patients suspected, due to their clinical characteristics or job, of allergy to this allergen. Since we observed a high frequency of positive reactions, we decided to add diallyl disulfide to the standard series from October 1998. We therefore report 2 sets of results, the allergen applied in all cases being diallyl disulfide 0.1% pet. (Chemotechnique), applied on a Finn Chamber, with readings at D2 and D4.

(a) From 1994 to October 1998

This group comprised a total of 18 patients, 15 female and 3 male, with an average age of 36.64±6.12 years.

(b) From October 1998

We have tested a total of 75 patients, 57 female and 18 male, with an average age of 40.76±3.62 years.

Results

(a) Before October 1998

We found 9 cases with positive reactions out of the 18 tested. There was a clear majority of women, 83% being female and 17% male. The most common job was housewife (61%) followed by cook (22%). Lesions were mainly located on the hands (89%), 11% exclusively as pulpitis. The main other allergen in this group was nickel sulfate (31%), followed by palladium chloride, which was also included in the standard series, (16%), and cobalt chloride (13%).

(b) From October 1998

Diallyl disulfide was positive in 16% of the 75 tested. There was still a majority of women (76%), the most frequent job still being housewife (51%), though followed by more diverse jobs, including 12% students, 4% industrial and 4% agricultural. Lesions were mainly located on the hands (61%), but with other locations including the feet (9%), head (8%), legs (7%) and even widespread forms (7%). The main other allergen in this group was again nickel sulfate (28%), followed by palladium chloride (20%), and cobalt chloride (13%).

Female sex, housewives and involvement of the hand were all statistically significantly more common in those who were positive to diallyl disulfide than in those who were negative (OR 3.4, 95% CI 1.34–15.5; OR 5.79, 95% CI 1.81–18.45; OR 3.02, 95% CI 1.43–9.46; respectively).

Discussion

Hypersensitivity to diallyl disulfide does not always present with classical assymetrical pulpitis, but frequently also as hand eczema. It is more frequent in women and

related to being a housewife. It is easy to misdiagnose such cases as irritant contact dermatitis.

Diallyl disulfide became the 3rd commonest positive allergen, when added to our standard series, after nickel sulfate and palladium chloride and before cobalt chloride. The housewives whom we patch test should certainly be tested with it routinely.

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Allergic contact dermatitis from imidazolidinyl urea in an ultrasonic gel

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Key words: allergic contact dermatitis; preservatives; ultrasonic gel; imidazolidinyl urea; sunscreens; cosmetics; medicaments.

Case Report

A 47-year-old housewife, with a personal and family history of atopy, was referred for an exudative eczema on her arms and legs. The day before, she had been in the countryside wearing a bathing costume after applying a sunscreen (Avon® sun lotion SPF 3). Patch tests with the GEIDC standard series and other products demonstrated sensitization to triethanolamine and the sunscreen, ++ at D2 and D4. Thereafter, the 15 components of the sunscreen, kindly provided by the manufacturer, were patch tested. Positive reactions to triethanolamine (10% aq.) and imidazolidinyl urea (2% pet.), ++ at D2 and D4, were obtained.

4 years later, the patient suffered for 2 months with a shoulder pain. Treatment with muscle relaxants and diclofenac was prescribed. As she showed no improvement, ultrasound treatment was then given. 12 h after the 1st such session, she experienced intense itching and acute dermatitis in the exact area where the ultrasound gel had been applied. The eruption subsided in 7–10 days with topical treatment. A patch test with the ultrasound gel (Meditec SRL, Italy), as is, elicited a ++ reaction at D2 and D4. A Garelli (1) spot test, to detect the presence of triethanolamine, was negative when performed on the gel. The supplier of the gel informed us that its components were: water ethylenediamine tetra-acetate, methylisothiazolinone+methylchloroisothiazolinone, propylene glycol, imidazolidinyl urea, sodium hydrate and Patent Blue V. The patient declined further patch testing, but imidazolidinyl urea was assumed to be the cause of her reaction to the gel, because of her previous patch test reaction to it.

Discussion

Imidazolidinyl urea (Germall® 115) releases little formaldehyde, and consequently poses little threat to formaldehyde-sensitive patients. In our patient, formaldehyde was negative on patch testing. In Belgium, 1175 patients were tested with a pharmaceutical/cosmetic patch test series that included imidazolidinyl urea. Only 8 (0.7%) positive reactions were observed, of which only 1 was accompanied by a reaction to formaldehyde (2). In the USA, where imidazolidinyl urea is in the standard series, 1.5% of patients patch tested react to this preservative (3).

We have found only 1 case of allergic contact dermatitis due to an ultrasonic gel, and this was caused by Euxyl® K 400 (4). Propylene glycol has been reported as a contact sensitizer in electrocardiography gels (5). Such gels are widely used in diagnostic pro-

cedures (echography, electrocardiography and ultrasonography), and must be considered a source of contact allergy.

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Bullous contact dermatitis from nasturtium

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Key words: allergic contact dermatitis; nasturtium; *Tropaeolum majus*; plants; gardening.

Case Report

A 72-year-old woman presented with severe, acute contact dermatitis, demonstrating an inflammatory infiltrate, with vesicles and bullae on her hands and forearms. 5 days previously, she had worked in her garden on several plants. First, a phototoxic reaction after contact with fumocumarins was suspected, but the patient insisted on a close relationship with the handling of nasturtium. She was tested, utilizing the prick-to-prick technique, with leaf, flower and stalk of nasturtium. After 1 and 2 days, leaf (+++), flower (+) and stalk (+) elicited positive reactions, displaying profound erythematous infiltration without an immediate response. Control prick tests in 3 volunteers with the plant material described showed no immediate or delayed responses. Due to the strong reactions of our patient, further patch testing with plant material was not performed. After therapy with oral corticosteroids for 5 days and no further contact with nasturtium, healing progressed rapidly.

Discussion

There are 2 reports of allergic (1, 2), and no reports of irritant, skin reactions after contact with nasturtium. Positive delayed-type prick test reactions to various parts of the plant confirmed the diagnosis in our patient. Nasturtium (*Tropaeolum majus*) has become common in European gardens; in addition, its leaves are sometimes added to homemade salads. The plant is a member of the Tropaeolaceae, originating from Central and South America (3). Plants of this family produce mustard oil, with a characteristic peppery flavour. Oil of mustard contains thioglucosides, which, in the presence of water, are converted to isothiocyanates. These chemically highly reactive compounds have both irritant and allergenic potentials, being implicated in immunologically-mediated delayed-type inflammatory skin responses after repeated exposure to nasturtium (2).

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2 cases of allergic contact cheilitis from sodium lauryl sulfate in toothpaste

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Key words: allergic contact cheilitis; sodium lauryl sulfate; toothpaste; cosmetic; patch testing technique; surfactants.

In cases of allergic contact cheilitis from toothpastes, bactericidal agents, essential oils and preservatives can be the offending agents (1). Sodium lauryl sulfate (SLS) is often contained in toothpastes, but is well-known as an irritant rather than as a sensitizer (2).

Care Reports

Case no. 1

A 38-year-old woman presented with pruritic well-circumscribed erythematous edematous patches on and adjacent to the lips. Similar lesions had recurred for several years previously. Patch tests with 2 of her lipsticks and toothpastes showed a strong positive reaction to 1 toothpaste (2% aq.). Patch tests with 3 ingredients of this toothpaste (toothpaste B), supplied by the manufacturer, showed strong positive reactions to SLS down to 0.1% aq. (Table 1).

Case 2

A 61-year-old woman developed somewhat-demarcated pruritic erythematous scaly patches around the lips. Lesions seemed to appear after brushing her teeth. Patch tests with a lipstick, a toothpaste and its ingredients showed weak positive reactions to the toothpaste (1% aq.) and SLS 0.1% aq. (Table 1).

Table 1. Patch test results

		Case no. 1		Case no. 2	
		D2	D4	D2	D4
toothpaste A	(2% aq.)	−	−	NT	NT
toothpaste B	(2% aq.)	++	++	NT	NT
	(1% aq.)	NT	NT	−	+
SLS	(1% aq.)	++	++	++	++
	(0.1% aq.)	++	++	−	+

Discussion

Sodium lauryl sulfate (SLS) is usually contained in toothpaste at 0.5–2.0% (3). Rinsing gets rid of 96% of the SLS within 2 min (4), thus reducing the risk of contact cheilitis from SLS.

The concentration of SLS for patch testing is controversial. Fisher recommended 1% aq. We performed patch tests in 3 normal subjects with SLS 10%, 1%, and 0.1% aq. All reacted to 10%, 2 to 1%, but none to 0.1%. Prater et al. (5) performed patch tests in 12 subjects who had an eczematous reaction to the SLS wetting test, with 10 of them showing signs of sensitization, only 2 of them reacting to SLS 0.1% aq. The positive reactions to SLS 0.1% aq. in our patients therefore suggest contact allergy, although the appropriate concentration for patch testing remains to be clarified further.

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Allergic contact dermatitis from topical carmustine

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Key words: carmustine; lomustine; alkylating agents; cytotoxics, medicaments; allergic contact dermatitis; cross-sensitivity; cutaneous T-cell lymphoma; nitrosoureas; CAS 154-93-8.

Only 1 group have reported contact hypersensitivity to topical carmustine, and although 3 patients were open patch tested (1, 2), no controls were tested.

Case Report

A 67-year-old woman, with a 2-year history of tumour stage 1 cutaneous T-cell lymphoma (CTCL), was treated topically with a standard preparation of carmustine (2 mg/ml in 95% eth.) 2× daily for intermittent periods of 4 weeks. 6 months after an initially good response, a repeat course resulted in severe erosive inflammation at the treatment site.

Patch tests to a standard series, carmustine 1.0, 0.5 and 0.1% aq. of standard treatment concentration, and lomustine 1.0, 0.5, 0.1 and 0.05% aq. of standard treatment concentration gave positive reactions as shown in Table 1. 22 controls tested to 0.1% carmustine and 15 tested to 0.1% lomustine were all negative.

Table 1. Positive patch tests

Topical agent (conc. as % of standard treatment concentration)	Reactions	
	D2	D4
carmustine (1.0% aq.)	+++	+++
carmustine (0.5% aq.)	+++	+++
carmustine (0.1% aq.)	+++	+++
lomustine (1.0% aq.)	+++	+++
lomustine (0.5% aq.)	+++	++
lomustine (0.1% aq.)	+++	++
lomustine (0.05% aq.)	+++	++

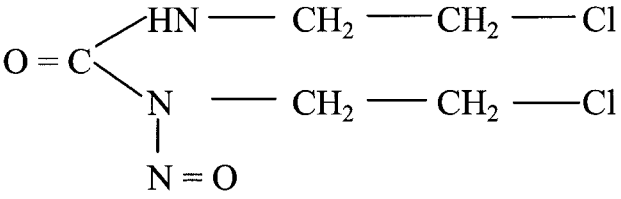

Fig. 1. The structure of carmustine.

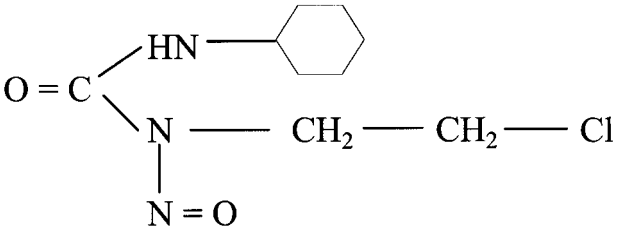

Fig. 2. The structure of lomustine.

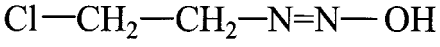

Fig. 3. Chloroethyl diazohydroxide.

Discussion

3 patients were previously reported as being hypersensitive to carmustine, 2 at 0.1% and 1 at 0.01% of standard treatment concentration (2 mg/ml in 95% ethanol) on open patch testing, but without controls. In our patient, patch test reactions to both carmustine and lomustine (investigated as a possible alternative) were severe at concentrations well below therapeutic levels.

Both drugs share the same chloro-ethyl nitrosurea structure (3), lomustine differing from carmustine by the substitution of a cyclohexyl group for 1 chlorethyl group (Figs. 1, 2). The nitrosoureas degrade to form chloroethyl diazohydroxide and an organic isocyanate. Lomustine and carmustine degrade to form the same chloroethyl diazohydroxide (Fig. 3), although the organic isocyanate differs. Therapeutic effects are due to the metabolites rather than the parent compound, the chloroethyl diazohydroxide being the active alkylater (4). This shared metabolite might possibly be the allergen, thus explaining the cross-sensitivity seen.

Carmustine has an irritant potential and mild erythema is common in patients treated with it, though this is rarely seen with lomustine (2). Irritancy was excluded in our patient by no reactions in controls at 0.1% aq. standard treatment concentration. We recommend this concentration for patch testing patients with suspected contact allergy to carmustine or lomustine.

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Occupational airborne allergic contact dermatitis from sawdust in livestock sheds

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Key words: ACD; airborne; colophony; sawdust; lifestock sheds.

Colophony (rosin; INCI name, colophonium) is widely used for its tackifying properties and in paper sizing (1). Colophony allergy from adhesives has long been known (2) and colophony was early in a standard series for patch testing (3). Karlberg et al. (4) reported the following airborne sources of exposure: soldering fumes, paperdust, sawdust, floor polish, conifers and a flooring material. Watsky (5) described 4 colophony-positive patients with airborne contact dermatitis from pine sawdust. 1 such patient was a 43-year-old horse breeder who had recently substituted pine chips for straw in this stables, leading to resolution of the dermatitis.

Case Reports

Case no. 1

A 21-year-old farmer's son, studying at an agricultural college, worked weekends and holidays on his parents' piggery and cattle farm. He developed a dermatitis, mainly of the face but also of the forearms, which made work almost impossible.

He was patch tested to the European standard series, veterinary preservatives and antibiotics. Colophony was positive at D2 (+) and D3 (+). A patch test with pine sawdust from the piggery floor was negative. 2 sawdust extracts were prepared with a polar solvent (16 g per 100 methanol) and a non-polar solvent (16 g per 100 ml n-hexane), respectively. Both extracts were concentrated by vacuum evaporation to a final volume of 3 ml each and used in a 2-fold dilution series for patch testing. Notably, the non-polar extract gave positive reactions down to a 16-fold dilution (Table 1). No reactions were obtained to these extracts in 7 healthy controls.

As he had no direct contact with the sawdust, it was concluded that he had airborne allergic contact dermatitis from colophony in sawdust. Substitution of the sawdust with "old-fashioned" straw completely resolved his dermatitis.

Table 1. Results of patch tests with dilutions of 2 extracts of sawdust, after 2 and 3 days (case no. 1)

Dilution	Methanol extract	n-hexane extract
4×	+/+	+/+
8×	−/?+	+/+
16×	−/−	−/+
32×	−/−	−/−

Case no. 2

A 43-year-old dairy farmer had had eczema of the hands, face, neck and legs for 8 months. Cleansing agents and fodder caused itching of the hands. Gloves were used only when handling pesticides (1× a year). Initially, he was patch tested with a veterinary series (mainly antibiotics and additives to fodder) and some of his own products, such as liquid soaps and fodder. A positive patch test to benzylpenicillin 20% aq. at D2 (+), D3 (+) and D7 (++) was found. Prick tests with aeroallergens, including cow dander, were all negative.

Every time the patient treated diseased cows with penicillin, his eczema relapsed. He was advised to avoid penicillin, to work as cleanly as possible with protective clothing and gloves, and to treat his skin with an emollient. He managed to avoid contact with penicillin but, in spite of this, the eczema did not much improve. A few months later, a 2nd series of patch tests was done: standard and additional standard series, cow dander, a teat spray and photopatch tests with olaquindox. He showed at D2 a positive reaction (+) to colophony.

This farmer too had covered the floor of the cow shed with sawdust and wood chips, partly from pine trees. This material bothered him, especially when his skin was already irritated. He could not substitute the sawdust and chips for straw, because a mixture of straw and cow dung yields a thick substance that clogs the drainage pipe from the cow shed. Final diagnoses were therefore allergic contact dermatitis from penicillin and airborne allergic contact dermatitis from colophony in sawdust.

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Contact urticaria syndrome from mustard in anchovy fillet sauce

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Key words: contact urticaria; immediate-type allergy; anchovy fillet; sauce; mustard; food.

Case Report

A 51-year-old non-atopic woman had 2× been hospitalized in the last 8 months for acute generalized urticaria, with lip and tongue oedema and dyspnea, which appeared within 20 min of eating fillet of anchovy in sauce. Handling the same food caused angioedema of the hands.

An open test with anchovy fillet in sauce (as is) on the extensor right arm provoked a pruritic wheal reaction within a few minutes. Subsequently, a prick-by-prick test with anchovy fillet in sauce gave a strongly positive reaction, with pseudopodia, after 10 min. Prick-by-prick tests with the same food in 15 controls were negative. Intradermal tests with common food allergens (Lofarma Allergeni, Milan) and with codfish, mackerel and herring were negative. Specific IgEs (RAST) to common pollens and inhalants, anchovy, codfish, mackerel and herring were, however, negative.

From the manufacturer in Parma, Italy, we therefore obtained complete information about the ingredients of the sauce: garlic, red wine, chilli and mustard. Prick tests with extracts of garlic and mustard (Lofarma Allergeni, Milan), a prick-by-prick test with chilli and mustard, and a prick test with red wine gave a strongly positive reaction to mustard. Cumulative oral challenge with red wine, up to 80 ml, was negative. Prick and prick-by-prick tests with mustard were negative in 5 controls. The positive skin reaction to mustard was not accompanied by specific IgE (RAST) to isothiocyanate.

Discussion

Absence of immediate or late gastrointestinal symptoms suggests oral allergy syndrome (OAS): contact urticaria confined almost exclusively to the oropharynx (1). Our patient, however, also developed oedema of the hands after short contact with anchovy fillet in sauce. OAS affects 40–50% of adults with pollen allergy, especially to birch and ragweed (2): no specific IgEs for these allergens were present in our patient.

Reports of immediate reactions to mustard are not frequent (3, 4). Occupational contact urticaria from mustard in workers employed in fish-finger and fillet production has been reported (5). Of 43 patients investigated for occupational skin disease involving spices, 5 were diagnosed as having spice dermatitis (6). Of these 5 patients, 1 also showed a positive prick test to mustard.

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Recurrent allergic contact dermatitis and cheilitis due to castor oil

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Key words: allergic contact dermatitis; cheilitis; castor oil; cosmetics; lipstick; Ricinus communis.

Case Report

A 43-year-old woman had a past medical history of sinus aspergillosis and of facial edema after oral tixocortol pivalate (Oropivalone®). She presented with recurrent facial dermatitis associated with a facial moisturizer. Patch testing was performed in Finn Chambers with the European standard series (Trolab®, Hermal, Germany), corticosteroids and her cosmetics. +/+ reactions were observed at D2/D3 to the moisturizing lotion

Complexe Phytopurifiant Visage (PBE Aquatonic Laboratoires, Évreux, France) and to tixocortol pivalate in a corticosteroid mix (unpublished data).

Patch testing was then performed with the ingredients of the lotion provided by the manufacturer, showing a +/+ reaction at D2/D3 to castor oil (Ricinus communis) 10% pet. (contained in the lotion at 8%), the other ingredients being negative. As the patient also reported recurrent cheilitis, further patch tests were applied, which showed + to ++ reactions to several lipsticks (Jacques Dessange®, Yves Saint Laurent®, Chanel®, Christian Dior®) and lip balms (Immoxa®, Rosalèvre Monnot®, Stick au cold cream Avène®), all containing castor oil. Breakdown of 2 lipsticks (their components being provided by Jacques Dessange, SFC, Brive, and Avène, Laboratoires Pierre Fabre, Boulogne, France) confirmed sensitivity to castor oil tested as is and 15% pet. +/+. In contrast, lipsticks without castor oil, lanolin alcohol 30% pet., Amerchol L-101 50% pet., lanolin 30% pet., oleyl alcohol 20% pet., and ethoxylated castor oil 20% pet. (Arlatone 289 contained in Emla® cream) gave no reactions.

Discussion

Castor oil (CO) CAS no. 8001–79–4, also called ricinus oil, oleum ricini, oil of Palma Christi, and INCI name Ricinus communis, is a fixed oil obtained from the seeds of *Ricinus communis*, Linn (1). A triglyceride, in which the main fatty acids are ricinoleic acid (~90%), oleic acid, linoleic acid, palmitic acid, and stearic acid, it is widely used in lubricants and cutting fluids, formerly as a purgative, and frequently in cosmetics for its emollience, resistance to rancidness, and ready solubility in alcohol (1): make-up, nail polish removers, lotions, moisturizers and soaps (1, 2). CO is used in most lipsticks: it renders the pigment soluble, and its high viscosity delays the settling of pigments from the molten lipstick and lessens the tendency to smear and run off.

Considering its wide use, CO is a sensitizer seldom reported from lipsticks and lip creams (2–6), make-up remover (7), zinc oxide-based cream (8) and flexible collodion in wart removers (9, 10). Allergic reactions seem to be due to free ricinoleic acid (4), though probably by way of its oxidation products. Hydrogenated CO seems not to be allergenic (2). Ethoxylation of CO could decrease its sensitizing power, as attested by the negative patch test to ethoxylated CO in our patient, who also tolerated cosmetics containing PEG 40 ethoxylated CO. In contrast, sulfonation gives sulfonated or sulfated CO, also named Turkey red oil, which seems to be more allergenic (1, 11).

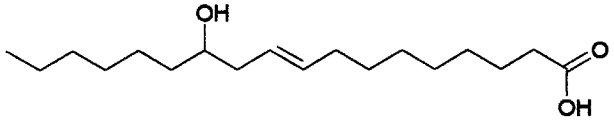

Fig. 1. Ricinoleic acid.

Cross-reactions or concomitant reactions have been reported to CO and to lanolin or oleyl alcohol. They could be due to some structural similarities between oleyl alcohol (also contained in lanolin) and ricinoleic acid (5). This was not the case in our patient, but oleyl alcohol may contain various impurities and many oxidation products.

CO has to be considered in suspected cosmetic dermatitis. Patch testing can be performed with CO as is, since it is not irritant (4, 8, 10). This case also stresses the usefulness of the breakdown of positive tests to commercial products, in order to detect the suspected allergen and to subsequently prevent recurrences of dermatitis.

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Occupational allergic contact dermatitis from glyoxal, glutaraldehyde and neomycin sulfate in a dental nurse

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Key words: occupational; dental staff; health care workers; allergic contact dermatitis; glyoxal; CAS 107–22–2; glutaraldehyde; CAS 111-30-9; neomycin; hand eczema; disinfectant; colophonium.

Case Report

A 44-year-old non-atopic dental nurse had qualified 20 years ago. She had previously noticed dermatitis from nickel-containing jewellery, and had had work-related hand dermatitis for 15 years before being referred for investigation. Her dermatitis was restricted to the fingerwebs, fingertips and backs of the fingers.

2 patch test sessions were performed by the Finn Chamber® method according to ICDRG recommendations. Nickel sulfate (5% ++; 2.5%, ++; 1%, ++; 0.32% +; 0.1% +; Epitest, Helsinki, Finland); neomycin sulfate (++; 20% pet., Trolab, Hermal, Reinbeck/Hamburg, Germany) and colophonium (+; 20% pet., Trolab) were positive in a modified standard series, and glutaraldehyde (++; 0.3% pet., Trolab), glyoxal [+; 10% aq.; made from glyoxal (40% solution in water) for synthesis; Merck 820610], gold sodium thiosulfate (+; 0.5% pet.; Chemotechnique AB, Malmö, Sweden) and thimerosal (+++, 0.1% pet.; Chemotechnique) in dental screening and antimicrobial series. A fragrance series, a (meth)-acrylate series and a rubber chemical series were negative. Prick tests with standard environmental allergens, including natural rubber latex, as well as chloramine-T (1) and ammonium and potassium persulfates (2), were negative.

In the 2nd patch test session, positive reactions to glyoxal (+; 10% aq.), gold sodium thiosulfate (+; 0.5% pet.) and neomycin sulfate (++; 20% pet.) confirmed these sensitizations. Furthermore, glutaraldehyde was positive in a dilution series in pet. (1%, +++; 0.5%, ++; 0.25%, +; 0.125%, +) and aq. (1%, ++; 0.5%, ++; 0.25%, +; 0.125%, +). The glutaraldehyde patch test substances were made from 25% glutaraldehyde EM Grade solution (Electron Microscopy Sciences, Fort Washington, Pennsylvania, USA). The patient was informed about her allergies, and by carefully avoiding the allergenic products, she was symptomless during a follow-up visit 6 months later.

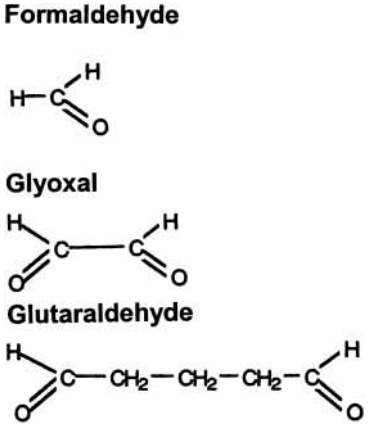

Fig. 1. Chemical structures of formaldehyde, glyoxal and glutaraldehyde.

Discussion

Her sensitizations to glutaraldehyde and glyoxal were considered occupational, since she had used these disinfectants for the cold sterilization of instruments. Glutaraldehyde had been used for 15 years at her workplace, and, as the start of her hand eczema and her use of glutaraldehyde coincided, she may have been allergic to glutaraldehyde for 15 years before diagnosis. Currently, she used, among others, the cold disinfectant Dürr ID 210 (distributed in Finland by Oriola Oy, Hammasväline, Espoo, Finland). The material data safety sheet of this disinfectant declared the following: 6% formaldehyde (CAS number 50–00–0); 4% glyoxal (CAS 107–22–2), 4% glutaraldehyde CAS 111–30–8); 1–5% silica, crystalline- tripoli (CAS 1317–95–9); and 2% N-alkyl-N-benzyl-N,N-dimethyl-ammonium chloride (CAS 80001–54–5).

For years, the patient had frequently treated her occupational hand dermatitis with a cream containing bacitracin and neomycin sulfate, her resulting sensitization to neomycin thus also being compensatable in Finnish law (3). Her major exposure to colophonium occurred at home, and her sensitization to this was not therefore considered occupational, although she used colophonium-containing Duraphat® lacquer (33% colophonium) (4) in her work.

Glyoxal (ethanedial) is a dialdehyde with potent antimicrobial properties, and is in many disinfectants for equipment and rooms (5). Elsner et al. (5) reported the sensitization of 4 nurses and 3 hospital cleaners. Positive patch test reactions to formaldehyde were also found in 2 of the 7 and to glutaraldehyde in 3 of 6 patients tested. Glyoxal is used in dentistry to disinfect instruments, and Foussereau (6) suggested that it should be in a dental series. We have applied it since November 1998. To our knowledge, dental personnel have not previously been

reported to be sensitized to glyoxal (7), except in a multicentre patch test study (8).

As our patient had been exposed to both glutaraldehyde and glyoxal, it is not clear whether she demonstrated cross-reactivity or concomitant sensitization. Formaldehyde was negative in our patient. Kiec-Swierczynska et al. (9) found a frequency of allergy to aldehydes (formaldehyde, glutaraldehyde and glyoxal) in 280 healthcare workers with skin lesions of 22.8%. The majority were sensitive to only 1 aldehyde, indicating lack of cross-reaction, glutaraldehyde being positive in 12.4% and glyoxal in 1.9%. In a German multicentre study of 31,849 healthcare workers, 4.2% were positive to glyoxal (8), dental nurses having the highest frequency of glyoxal sensitivity (8).

Glyoxal has also sensitized in a polyvinyl resin emulsion, Hindson & Lawlor (10) reporting that glyoxal 10% aq. did not react in controls. The same patch test concentration was used by Elsner et al. (5). We included glyoxal (10% aq.) in our antimicrobial series in November 1998. In 6 months, we patch tested 61 patients; 2 had allergic reactions and 8 irritant reactions. Accordingly, 10% may be too high, but at 2% aq., false-negative results may occur (5). Glyoxal, like formaldehyde, may be a difficult chemical to patch test with, and further studies of the correct patch test concentration are needed.

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Lichenoid reaction to temporary tattoo

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Key words: temporary tattoos; henna; p-phenylenediamine; lichenoid reaction; allergic contact dermatitis; cosmetics.

Traditional henna is a powder made from the leaves of the *Lawsonia inermis* (Lythraceae), a shrub cultivated in North Africa, India and Sri Lanka (1). Extract of this plant is widely used, mixed with additives, to dye hair and for skin decoration, lawsone, a naphthoquinone (2-hydroxy-1,4-naphthoquinone), being the active dye ingredient (1). Allergic cutaneous reactions due to henna itself are rare, especially without occupational exposure (2).

Case Report

A 38-year-old man, with no family or personal history of skin disease, presented with a patterned lichenoid reaction on the neck. 20 days earlier, during a trip to east Africa (Zanzibar), he had received a henna non-permanent tribal tattoo, which faded in about 10 days. After a further 10 days, the tattoo had reappeared as a red palpable skin reaction, the tattooed area being raised 0.5 cm above the surrounding skin. No history or other mucosal and/or cutaneous lesions suggestive of lichen planus were found. A biopsy showed a typical lichenoid dermal infiltrate with erosion of the basal layer of the epidermis. Treatment with topical corticosteroid led to resolution of the dermatosis in 1 week. After 3 months, the patient was patch tested to plain henna (ground dry leaves in pet.), which was positive (+++) after 2 days. Patch tests with the GIRDCA standard series in Finn Chambers on Scanpor (FIRMA Spa., Divisione Diagnostici Diagent, Firenze, Italy) were positive to p-phenylenediamine (++).

Discussion

With permanent tattoos, a lichenoid reaction to the red portion is one of the most common adverse effects (3). Foreign materials may occasionally trigger off immuno-

logical responses histopathologically indistinguishable from lichen planus (4). Lestringant et al. (5) recently described a lichenoid reaction to a henna mixture containing *p*-phenylenediamine, concluding that the main allergens responsible for such reactions were additives, and expecially *p*-phenylenediamine.

Recognition of hypersensitivity towards extract of *Lawsonia inermis* is important because contact with this substance has been associated with delayed and/or immediate-type reactions, such as angioedema of the face, lips, pharynx, larynx and bronchi (6). Unexplained toxicity, progressing to acute kidney failure, may also occur within a few hours of topical application of henna (7). Moreover, in vitro and in vivo studies have recently shown that lawsone is capable of causing oxidative hemolysis in G6PD-deficient subjects (8).

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Airborne nickel dermatitis

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Key words: nickel; airborne allergic contact dermatitis; clothing industry; occupational; seamstress; ambient heat.

Case Report

A 49-year-old woman, with a past history of nickel dermatitis due to fashion jewellery and episodes of dyshidrotic hand dermatitis, had been working as a seamstress for men's trousers in a sewing hall for more than 30 years. During the last 5 years, she had had eczema on the face, neck and finger webs. Her typical airborne contact dermatitis coincided with working from Monday to Friday. Prick tests to common aeroallergens were completely negative.

Patch tests with the European standard series were ++ to nickel sulfate 5% pet. and cobalt chloride 1% pet. at D2 and D3. Further patch tests with plastic, lacquer and glue, fragrance, textile and leather dye, and cosmetics – household series (Hermal) were negative. 3 out of 5 dust samples from the sewing hall were strongly positive for nickel by the dimethylglyoxime test. Patch tests with this dust were also positive, 5 nickel-negative persons, tested as controls, being negative. The patient subsequently lost her job and her dermatitis quickly healed.

Discussion

Contact dermatitis from nickel is as common as airborne nickel dermatitis is rare, 1 such case being due to a nickel-containing powder paint (1). To our knowledge, no previous case of airborne nickel dermatitis in the textile industry has been reported. The nickel is mainly rubbed off from hundreds of nickel-plated trouser-hangers, moved through the sewing hall by an overhead conveyor. Other nickel-plated surfaces are parts of the sewing machines, such as machine feet and thread spools, and also cutters, needles and pins. The trouser cloth, yarns, thread, machine cotton, tailor's chalk and other trimmings, scissors, and knives were all negative for nickel.

Important additional factors were the high room temperature of 28 to 32°C in the sewing hall and the constant sweating of the seamstress. Under such conditions, the nickel-containing dust adhered for many hours to the uncovered skin, increasing its bioavailability. On the fingertips and palms, contact with nickel-plated parts of the sewing machines, tools and trimmings was much more brief, and contact dermatitis in these areas of the hands was never seen. In general, in nickel-allergic persons, a threshold concentration of 10 μg nickel ions/cm^2 is necessary to elicit contact dermatitis (2, 3), the contact time needing to be at least 2 to 5 h (4–7).

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Irritant contact dermatitis of the hands following thoracic sympathectomy

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Key words: thoracic sympathectomy; palmar hyperhidrosis; irritant contact dermatitis; palmar dermatitis; occupational; metalworker.

Case Report

A 29-year old man had had palmar hyperhidrosis since puberty. Thoracic sympathectomy from T2 to T5 was performed in 1993. He had trained and worked as a metalworker for several years without skin problems. He subsequently noticed dryness of his hands and regularly applied cream to them. Starting in 1997, he developed incapacitating dermatitis of the hands while working in contact with water and irritants. On topical corticosteroids and away from work, rapid improvement in his skin condition was observed. Both his palms showed pronounced dryness and hyperkeratosis (Fig. 1). His alkali resistance was strongly reduced (1, 2). His family and personal history were negative for atopy, as were laboratory analysis and prick testing. No delayed-type reaction was detected on patch testing.

Fig. 1. Xerosis and scaling of the palmar aspect of the left hand.

Discussion

Thoracic sympathectomy as a last resort for incapacitating hyperhidrosis usually leads to dryness of the hands with a high level of long-term satisfaction (3, 4). 1 case of surgical reversal of sympathectomy for newly developed palmar dermatitis has been described (5). The only factors predisposing to dermatitis in our patient were his reduced alkali resistance and the dryness of his hands since sympathectomy. Decreased alkali resistance is usually tested on the forearm, which would also be affected by thoracic sympathectomy. In association with irritant exposure, upper thoracic sympathectomy seems to predispose to palmar dermatitis. A patient's potential risk of irritant contact dermatitis should thus specifically be assessed before upper thoracic sympathectomy is carried out.

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